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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,332	09/18/2000	Noriya Hayashi	001195	4422

23850 7590 07/07/2005

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EXAMINER

SELLERS, ROBERT E

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/664,332

Applicant(s)

HAYASHI, NORIYA

Examiner

Robert Sellers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6-10, 12, 17-19 and 21-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-8, 10, 12, 22, 27 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

Claims 9, 17-19, 21 and 23-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 6, 2002.

The text of section 103(a) of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 6-8, 10, 12, 22, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamazu et al. Patent No. 5,359,017; Buchwalter et al. Patent No. 5,879,859; Starkey Patent No. 5,384,339 and Green Patent No. 4,252,592 in view of Green Patent No. 4,299,938.

The rejection is maintained for the reasons of record set forth in the previous Office actions. The arguments filed June 28, 2005 have been considered but are unpersuasive.

1. Example 5 (col. 23) of Starkey contains 90 parts by weight of the elected species of 3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexane carboxylate which converts to a molar amount of 0.285 mole (90 parts per 316 g/mole). Column 20, lines 38-39 and column 21, lines 11-16 discloses the presence of as much as 10 parts by weight per 100 parts by weight of the resin component of a thermohardening catalyst such as the elected species of maleic anhydride. For 90 parts by weight of the resin, as much as 9 parts by weight of the thermohardening catalyst is used. This converts to 0.09 mole of

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maleic anhydride per cycloaliphatic diepoxide solely (9 parts per 98.6 g/mole), or a molar ratio of maleic anhydride to cycloaliphatic diepoxide of  $0.09:0.285 = 0.32:1$ .

2. It would have been obvious to incorporate the maleic anhydride disclosed in Starkey in a molar ratio of as high as 0.32:1 in order to optimize the catalysis of the epoxy group.

3. The calculations are based on the expressly recited proportion ranges of catalyst and resin component wherein the closest prior art catalyst and resin component are the elected species of maleic anhydride and 3,4-epoxycyclohexylmethyl-3,4-epoxycyclohexane carboxylate. The burden of proof shifts to applicants to demonstrate unexpected results for the claimed acid anhydride throughout a representative sampling of the molar ratio range of acid anhydride:photopolymerizable resin of from 0.3:1 to 1.4:1.

4. Example 1 of Buchwalter et al. (col. 9) shows a molar ratio of hexahydrophthalic anhydride:acetal diepoxide of 0.93:1 and an amount of sulfonium salt outside of the claimed range. However, the teachings of a reference are not confined to the examples. Column 7, lines 1-3 sets forth from 0.5-10% by weight of the photoinitiator which embraces the claimed parameters.

5. The declaration filed December 24, 2004 addresss the alleged criticality of the claimed molar ratio of anhydride:photopolymerizable resin which is not pertinent to the criticality of the claimed proportion range of sulfonium salt. There is no evidence of record establishing the patentability of the claimed proportion range of sulfonium salt of from 0.1 to 6.0 parts by weight per 100 parts by weight of the other components over the level exhibited in Buchwalter et al. wherein the type and amount of photopolymerizable resin and anhydride are held constant to isolate the effect of the concentration of sulfonium salt via a representative sampling of the claimed proportion range as well as the sulfonium salts of general formulae (IV), (IV') and (V).

6. The evidence revealed in the declaration only addresses the issue of the molar ratio of anhydride:photopolymerizable resin. However, the testing of a single molar ratio of 0.65:1 does not confer criticality throughout the claimed limits broadly ranging over an order of magnitude of from 0.3:1 to 1.4:1. The test does not pertain to Buchwalter et al. which shows a molar ratio of 0.93:1 and whose issue is the concentration of photoinitiator, not the molar ratio.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Sellers whose telephone number is (571) 272-1093. The examiner can normally be reached on Monday to Friday from 9:30 to 6:00. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).



Robert Sellers  
Primary Examiner  
Art Unit 1712